

Notice of Allowability

Application No.

10/039,355

Examiner

Dieu-Minh Le

Applicant(s)

KAPULKA ET AL.

Art Unit

2114

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to to the amendment filed 01/19/05 and the interview on 02/08/05.
2. ☒ The allowed claim(s) is/are 1-45.
3. ☒ The drawings filed on 03 January 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date ____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.


DIEU-MINH LE
PRIMARY EXAMINER

1. This office action is in response to the Amendment filed 01/18/05 and the interview on 02/07/05.
2. Claims 1-45 are allowable over the prior art of record.
3. Authorization for this Examiner's Amendment was given in a telephone interview with Mr. David J. McKenzie, Registration No. 46,919 on February 07, 2005.
4. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

EXAMINER'S AMENDMENT:

Please see the attachment.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2114

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (571) 272-3660. The examiner can normally be reached on Monday - Thursday from 8:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The Tech Center 2100 phone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**DIEU-MINH THAI LE
PRIMARY EXAMINER
ART UNIT 2114**

DML.
2/9/05

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being transmitted by email to the U.S. Patent and Trademark office to email address minh.le@uspto.gov, on February __8__, 2005.

/David McKenzie/
Attorney for Applicant

PATENT

Docket No. SJ0920010044US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Ken M. Kapulka et al.)
Serial No.: 10/039,355)
Filed: January 03, 2002) Group Art
For: METHOD AND SYSTEM FOR RECOVERY FROM A) Unit: 2114
COULING FACILITY FAILURE WITHOUT)
PREALLOCATING SPACE)
Examiner: Dieu-Minh Thai Le

EXAMINER'S AMENDMENT

Mail Stop AMENDMENT NO FEE
Commissioner for Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the telephone interview initiated by the Examiner and held on February 7, 2005, Applicants authorize an Examiner's amendment in accordance with the following amendments:

IN THE CLAIMS

1. (Currently Amended) A method for transparently recovering from a coupling facility failure, ~~said-the~~ method comprising the steps of:

- a) following the failure of a coupling facility, preventing access to ~~saidthe~~ coupling facility;
- b) analyzing a cache control structure of the coupling facility to determine~~ing~~ which data was previously assigned to ~~said-the~~ coupling facility;
- c) performing a nominate cache process to select~~ing~~ a new storage location for ~~said~~ the data previously assigned to ~~said-the~~ coupling facility; and
- d) assigning ~~said-the~~ data previously assigned to ~~said-the~~ coupling facility to a new storage location, ~~said-wherein~~ steps a) through d) are performed without requiring preallocation of ~~white-storage~~ space in ~~said-the~~ new storage location prior to the ~~said failure of~~ ~~said-coupling facility failure~~.

2. (Original) The method as recited in Claim 1 wherein said method comprises recovering from said coupling facility failure in a parallel sysplex configuration.

3. (Original) The method as recited in Claim 1 wherein said step a) comprises obtaining serialization on a cache control structure of said coupling facility to prevent said access to said coupling facility.

4. (Original) The method as recited in Claim 3 wherein said step b) comprises analyzing said cache control structure of said coupling facility to determine which of said data was previously assigned to said coupling facility.

5. (Original) The method as recited in Claim 3 wherein said serialization stops any read or write access to said coupling facility and prevents the assignment of new data to said coupling facility.

6. (Original) The method as recited in Claim 1 wherein said step c) comprises performing a nominate cache process to select said new storage location for said data previously assigned to said coupling facility.

7. (Currently Amended) The method as recited in Claim 1 wherein said step d) comprises the steps of:

d1) invalidating buffers associated with said data previously assigned to said coupling facility; and

d2) moving a control structure of said data previously assigned to said coupling facility to a cache control structure representing said new storage location.

8. (Original) The method as recited in Claim 7 further comprising the step of:

e) releasing said serialization on said cache control structure of said coupling facility such that read or write attempts to said coupling facility will prompt an internal retry which directs said read or write attempts to said new storage location.

9. (Original) The method as recited in Claim 8 further comprising the step of:

f) providing notification that a replacement for said failed coupling facility is available.

10. (Currently Amended) The method as recited in Claim 1 further comprising the step of:

e) employing steps a) through d) in a dual operation mode in conjunction with a conventional rebuilding technique.

11. (Currently Amended) In a parallel sysplex configuration, a method for recovering from a coupling facility failure, said method comprising the steps of:

a) following the failure of a coupling facility in a parallel sysplex configuration, obtaining serialization on a cache control structure of said coupling facility to prevent said access to said coupling facility;

b) analyzing said cache control structure of said coupling facility to determine which data was previously assigned to said coupling facility;

c) performing a nominate cache process to select a new storage location for

said data previously assigned to said coupling facility; and

d) assigning said data previously assigned to said coupling facility to said new storage location, said step of assigning said data previously assigned to said coupling facility to said new storage location further comprising the steps of:

d1) invalidating buffers associated with said data previously assigned to said coupling facility; and

d2) moving a control structure of said data previously assigned to said coupling facility to a cache control structure representing said new storage location, said steps a) through d2) performed without requiring preallocation of white space in said new storage location prior to said failure of said coupling facility.

12. (Original) The method as recited in Claim 11 wherein said serialization stops any read or write access to said coupling facility and prevents the assignment of new data to said coupling facility.

13. (Original) The method as recited in Claim 11 further comprising the step of:

e) releasing said serialization on said cache control structure of said coupling facility such that read or write attempts to said coupling facility will prompt an internal retry which directs said read or write attempts to said new storage location.

14. (Original) The method as recited in Claim 13 further comprising the step of:

e) releasing said serialization on said cache control structure of said coupling facility such that read or write attempts to said coupling facility will prompt an internal retry which directs said read or write attempts to said new storage location.

15. (Currently Amended) The method as recited in Claim 14 further comprising the step of:

_____ ~~h~~ f) providing notification that a replacement for said failed coupling facility is available.

16. (Currently Amended) The method as recited in Claim 11 further comprising the step of:

e) employing steps a) through d2) in a dual operation mode in conjunction with a conventional rebuilding technique.

17. (Currently Amended) A computer readable medium having computer readable code stored thereon for causing a computer to perform the coupling facility failure recovery steps of:

a) ~~following the failure of a coupling facility, obtaining serialization on a cache control structure of a coupling facility in a parallel sysplex configuration to preventing access to said the coupling facility subsequent to a coupling facility failure;~~

b) analyzing a cache control structure of the coupling facility to determineing which data was previously assigned to ~~said the~~ coupling facility;

c) performing a nominate cache process to selecting a new storage location for ~~said the~~ data previously assigned to ~~said the~~ coupling facility; and

d) assigning ~~said the~~ data previously assigned to ~~said the~~ coupling facility to ~~said the~~ new storage location, ~~said wherein~~ steps a) through d) are performed without requiring preallocation of ~~white storage~~ space in ~~said the~~ new storage location prior to ~~said failure of~~ ~~said the~~ coupling facility failure.

18. (Original) The method as recited in Claim 17 wherein said computer readable medium further includes computer readable code stored thereon for causing said computer to perform said steps of recovering from said coupling facility failure in a parallel sysplex configuration.

19. (Original) The method as recited in Claim 17 wherein said computer readable medium further includes computer readable code stored thereon for causing said computer performing said step a) to obtain serialization on a cache control structure of said coupling facility to prevent said access to said coupling facility.

20. (Original) The method as recited in Claim 19 wherein said computer readable medium further includes computer readable code stored thereon for causing said computer

performing said step a) to cause said serialization to stop any read or write access to said coupling facility and prevent the assignment of new data to said coupling facility.

21. (Original) The method as recited in Claim 19 wherein said computer readable medium further includes computer readable code stored thereon for causing said computer performing said step b) to analyze said cache control structure of said coupling facility to determine which of said data was previously assigned to said coupling facility.

22. (Currently Amended) The method as recited in Claim 17 wherein said computer readable medium further includes computer readable code stored thereon for causing said computer performing said step c) to perform a nominate cache process to select said new storage location for said data previously assigned to said coupling facility.

23. (Currently Amended) The method as recited in Claim 17 wherein said computer readable medium further includes computer readable code stored thereon for causing said computer performing said step d) to perform the steps of:

d1) invalidating buffers associated with said data previously assigned to said coupling facility; and

d2) moving a control structure of said data previously assigned to said coupling facility to a cache control structure representing said new storage location.

24. (Currently Amended) The method as recited in Claim 20 wherein said computer readable medium further includes computer readable code stored thereon for causing said computer to further perform the step of:

e) releasing said serialization on said cache control structure of said coupling facility such that read or write attempts to said coupling facility will prompt an internal retry which directs said read or write attempts to said new storage location.

25. (Currently Amended) The method as recited in Claim 24 wherein said computer readable medium further includes computer readable code stored thereon for causing said computer to further perform the step of:

U-f) providing notification that a replacement for said failed coupling facility is available.

26. (Currently Amended) The method as recited in Claim 17 wherein said computer readable medium further includes computer readable code stored thereon for causing said computer to further perform the step of:

e) employing steps a) through d) in a dual operation mode in conjunction with a conventional rebuilding technique.

27. (Currently Amended) A parallel sysplex computer system comprising:

a plurality of computer systems;

a shared direct access storage device coupled to ~~said~~ the plurality of computer systems;

a coupling facility coupled to ~~said~~ the plurality of computer systems;

a processor coupled to ~~said~~ the coupling facility;

a computer readable memory coupled to communicate with ~~said~~ the processor,

~~said~~ wherein processor ~~for performing~~ performs the coupling facility failure recovery steps of:

- a) following the failure of ~~said~~ the coupling facility, determining which data was previously assigned to said the coupling facility;
- b) preventing access to ~~said~~ the coupling facility;
- c) selecting a new storage location for ~~said~~ the data previously assigned to ~~said~~ the coupling facility; and
- d) assigning ~~said~~ the data previously assigned to ~~said~~ the coupling facility to ~~said~~ the new storage location, said the step of assigning the data previously assigned to the coupling facility to the new storage location further comprises:
 - d1) invalidating buffers associated with the data previously assigned to
 - the coupling facility;

wherein steps a) through d) are performed without requiring preallocation of ~~white~~ storage space in ~~said~~ the new storage location prior to ~~said~~ failure of said the coupling facility failure.

28. (Original) The parallel sysplex computer system of Claim 27 wherein said processor performs said step a) by obtaining serialization on a cache control structure of said coupling facility to prevent said access to said coupling facility.

29. (Original) The parallel sysplex computer system of Claim 28 wherein said processor performs said step b) by analyzing said cache control structure of said coupling facility to determine which of said data was previously assigned to said coupling facility.

30. (Original) The parallel sysplex computer system of Claim 28 wherein said serialization stops any read or write access to said coupling facility and prevents the assignment of new data to said coupling facility.

31. (Original) The parallel sysplex computer system of Claim 27 wherein said processor performs said step c) by performing a nominate cache process to select said new storage location for said data previously assigned to said coupling facility.

32. (Currently Amended) The parallel sysplex computer system of Claim 27 wherein said processor performing said step d) further performs the steps of:

~~d1) invalidating buffers associated with said data previously assigned to~~
~~said coupling facility; and~~

d2) moving a control structure of ~~said~~ the data previously assigned to ~~said~~ the coupling facility to a cache control structure representing ~~said~~ the new storage location.

33. (Currently Amended) The parallel sysplex computer system of Claim 29 wherein said processor further performs the step of:

e) releasing said serialization on said cache control structure of said coupling facility such that read or write attempts to said coupling facility will prompt an internal retry which directs said read or write attempts to said new storage location.

34. (Currently Amended) The parallel sysplex computer system of Claim 33 wherein said processor further performs the step of:

_____ f) providing notification that a replacement for said failed coupling facility 4 is available.

35. (Currently Amended) The parallel sysplex computer system of Claim 33 wherein said processor further performs the step of:

e) employing steps a) through d) in a dual operation mode in conjunction 4 with a conventional rebuilding technique.

36. (Currently Amended) A method for transparently recovering from a coupling facility failure, said method comprising the steps of:

a) following the failure of a coupling facility, preventing access to said coupling facility;

b) determining which data was previously assigned to said coupling facility;

c) selecting a new storage location for said data previously assigned to said coupling facility; and

d) assigning ~~said the~~ data previously assigned to ~~said the~~ coupling facility to ~~said the~~ new storage location, said the step of assigning data previously assigned to the coupling facility to the new storage location further comprises moving a control structure of the data previously assigned to the coupling facility to a cache control structure representing the new storage location;

wherein steps a) through d) are performed without requiring preallocation of white storage space in ~~said the~~ new storage location prior to ~~said failure of said the~~ coupling facility failure.

37. (Original) The method as recited in Claim 36 wherein said method comprises recovering from said coupling facility failure in a parallel sysplex configuration.

38. (Original) The method as recited in Claim 36 wherein said step a) comprises obtaining serialization on a cache control structure of said coupling facility to prevent said access to said coupling facility.

39. (Original) The method as recited in Claim 38 wherein said step b) comprises analyzing said cache control structure of said coupling facility to determine which of said data was previously assigned to said coupling facility.

40. (Original) The method as recited in Claim 38 wherein said serialization stops any read or write access to said coupling facility and prevents the assignment of new data to said coupling facility.

41. (Original) The method as recited in Claim 36 wherein said step c) comprises performing a nominate cache process to select said new storage location for said data previously assigned to said coupling facility.

42. (Currently Amended) The method as recited in Claim 36 wherein said step d) comprises the steps of:

_____d1)invalidating buffers associated with said data previously assigned to said coupling facility; and

d2) ~~moving a control structure of said data previously assigned to said coupling facility to a cache control structure representing said new storage location.~~

43. (Currently Amended) The method as recited in Claim 42 further comprising the step of:

e) releasing said serialization on said cache control structure of said coupling facility such that read or write attempts to said coupling facility will prompt an internal retry which directs said read or write attempts to said new storage location.

44. (Original) The method as recited in Claim 43 further comprising the step of:

f) providing notification that a replacement for said coupling facility which failed is available.

45. (Currently Amended) The method as recited in Claim 36 further comprising the step of:

e) employing steps a) through d) in a dual operation mode in conjunction with a conventional rebuilding technique.

REMARKS

[0001] The Examiner telephoned Applicant's attorney to discuss certain grammatical errors and informalities in the claims as submitted in the Applicants' last response mailed January 18, 2005. The Examiner requested, and the Applicant's attorney agreed, to submit these amendments which include the earlier provided amendments as well as further minor changes to address the grammatical errors and other informalities with the understanding that these will be entered by way of an Examiner's amendment and consequently place the case in condition for allowance of Claims 1-45.

[0002] In the event any questions or issues remain that can be resolved with a phone call, the Examiner is respectfully requested to initiate a telephone conference with the undersigned.

Respectfully submitted,

/David McKenzie/

David J. McKenzie
Reg. No. 46,919
Attorney for Applicant

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